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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/782,008	02/18/2004	Katsunobu Sumimura	KGMEP016	5426
22434	7590	06/01/2007		
BEYER WEAVER LLP			EXAMINER	
P.O. BOX 70250			LEFF, STEVEN N	
OAKLAND, CA 94612-0250			ART UNIT	PAPER NUMBER
			1761	
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			06/01/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/782,008	<b>Applicant(s)</b> SUMIMURA ET AL.	
	<b>Examiner</b> Steven Leff	<b>Art Unit</b> 1761	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_\_.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1,3,4,7,9 and 12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3,4,7,9 and 12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 January 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date: _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                        | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date: _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
  2. Ascertaining the differences between the prior art and the claims at issue.
  3. Resolving the level of ordinary skill in the pertinent art.
  4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
- Claims 1, 4, and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bengtsson et al. (3734751). The reference is taken as cited in the previous Office action, and further with respect to the limitations of previous claims 5-6, and 8. Applicant has incorporated the previous limitations of the claims 5-6, into claim 1, thus necessitating the new rejection.

With regards to claims 1, 4, and 7, Brix is a measurement that is dependant upon the amount of solids in a given weight of plant juice. Expressed another way Brix is a summation of pounds of sucrose, fructose, vitamins and other solids in one hundred pounds of any particular plant juice. The amount of water that is present as well as the amount of solids that are present is dependant upon the type of plant. Further the Brix value can be altered to any degree by the addition or subtraction of water. Therefore with regard to Bengtsson et al., although Bengtsson et al. does not specifically recite a specific Brix value for the concentrated juice, however Bengtsson et al. does teach "partially dewatering", and further teaches a dry matter content of 9-15% resulting in an effluent (vegetable juice) with a dry matter content of less than 3%. It would have been obvious to one of ordinary skill in the art to adjust the Brix value by adjusting the amount of water with respect to the solid (sugar) content. This value would further be dependent upon the

type of vegetable being used due to the differences in sugar content between different vegetables. Consequently, one of ordinary skill in the art would have been motivated to adjust the Brix value in order to obtain an end product that is desirable in taste, color, etc. with respect to the specific vegetable being used. Therefore the referenced value and method meet those of the instant claims, and it would be expected that the vegetable juice would attain a Brix values in the ranges listed in the instant claims, absent any clear and convincing evidence and/or arguments to the contrary.

In addition, the length of time which centrifugation takes place during "dewatering" would proportionally affect the Brix value due to the amount of water that would be present in the effluent (vegetable juice). The Brix value, with respect to Bengtsson et al. would be dependant upon the extent of which "dewatering" is to take place. The effluent (vegetable juice) could have a range of possible Brix values that could be controlled by the amount of "dewatering". The office action has set forth a proper obviousness rejection, and thus the burden shifts to applicant to demonstrate otherwise. Thus the claimed invention would have been obvious to one of ordinary skill in the art at the time of the invention by the applicant, absent any clear and convincing evidence and/or arguments to the contrary.

With regard to the Declaration filed March 5<sup>th</sup>, 2007, the Office action sets forth clear reasons why the instant claims are rejected over the prior art, and that applicant does not involve an inventive step, and does not provide a patentable distinction to the claims. Further, to recite a specific Brix value with respect to the concentration of juice, as is taught by Bengtsson et al., would be a matter of judicious selection of specific parameters with respect to the overall desired outcome of the product which is treated, and further already taught by Bengtsson et al. In the instant where a specific vegetable, and subsequently a specific vegetable juice is produced and treated, one of ordinary skill would have been motivated to produce a specific Brix concentration thus identifying the optimal Brix concentration with respect to a specific vegetable at a number of different result effective variables thus more precisely affecting the taste of the juice. Therefore "where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation," (see MPEP 2144.04 IIA) and further "the normal desire of scientists or artisans to improve upon what is already generally known provides the motivation to determine where in a disclosed set

of percentage ranges is the optimum combination of percentages." (see MPEP 2144.04 IIA)

- Claims 3, 9, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bengtsson et al. (3734751) in view of Hekai (4857343). The references are taken as cited in the previous Office action, and further with respect to the limitations of previous claims 5-6, and 8. Applicant has incorporated the previous limitations of the claims 5-6, into claim 1, thus necessitating the new rejection.

With regards to claims 9, and 12, although Bengtsson et al. does not teach a specific speed with which the juice flows over the membrane surface during electrodialysis Bengtsson et al. does teach the use of vegetable juice, specifically spinach juice, and the method of removing nitrate from concentrated juice through the use of electrodialysis. Further, Hekai does teach the idea of controlling the flow rate of the juice during electrodialysis. The flow rate with which the vegetable juice passes over the membranes during electrodialysis can be, and is needed to be, directly controlled in order to attain the desired vegetable juice. For instance, different factors such as, vegetable juice with different Brix values, and the temperature of the juice would affect the viscosity as well as the specific type of vegetable juice being used. All of these factors must be taken into account when adjusting the flow rate of the juice with respect to the membrane, thus necessitating a valve for controlling the flow rate. Therefore with regard to claims 3, 9, and 12, it would have been obvious to combine a range of Brix values, and/or a specific vegetable, with a range of operating speeds for the vegetable juice.

With regard to claim 3, Hekai teaches in example 1 the use of a "chilled (42 F) single strength orange juice". Although example 1 specifically recites the use of orange juice, Hekai teaches the overall method with respect to "fruit and vegetable juices". (col. 1 line 6+) Consequently, it would have been obvious to one of ordinary skill in the art to substitute a vegetable juice such as spinach, celery or kale juice, as taught by Bengtsson et al., for the orange juice as is stated by Hekai in example one. Hekai therefore teaches the method of producing a vegetable juice using electrodialysis, where the juice is chilled to a temperature of less than 10C and the juice flows into the chamber at a flow rate of .5-10cm/sec. The only difference between the prior art of Bengtsson et al. and that of the claimed method was a recitation of temperature and speed of the juice flowing over the

membrane; however Hekai positively teaches these specifics with regards to producing vegetable juice. Thus the method of producing a vegetable juice, of the instant claims, would not be expected to perform differently than the prior art method; therefore the claimed method is not patentably distinct from the prior art method.

Thus with respect to claims 3, 9, and 12, it would have been obvious to one of ordinary skill in the art at the time of the invention by the applicant to have made or produced a vegetable juice which is at a temperature of below 10C and a flow rate, with respect to the membrane, of 0.5-10cm/sec during electrodialysis.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven Leff whose telephone number is (571) 272-6527. The examiner can normally be reached on Mon-Fri 8:30 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Milton Cano can be reached on (571)272-1398. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1761

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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**KEITH HENDRICKS**  
**PRIMARY EXAMINER**